

Siu-Kui Au

List of Publications by Year in descending order

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141
papers

9,358
citations

47006

47
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38395

95
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146
all docs

146
docs citations

146
times ranked

3308
citing authors

#	ARTICLE	IF	CITATIONS
1	Uncertainty quantification in Bayesian operational modal analysis with multiple modes and multiple setups. <i>Mechanical Systems and Signal Processing</i> , 2022, 164, 108205.	8.0	5
2	Fast computation of uncertainty lower bounds for state-space model-based operational modal analysis. <i>Mechanical Systems and Signal Processing</i> , 2022, 169, 108759.	8.0	3
3	Identifying modal properties of trees with Bayesian inference. <i>Agricultural and Forest Meteorology</i> , 2022, 316, 108804.	4.8	7
4	Measuring configuration of multi-setup ambient vibration test. <i>Mechanical Systems and Signal Processing</i> , 2022, 175, 109153.	8.0	2
5	Field measurement and wind tunnel experimental investigation of a supertall building with closely spaced modes under typhoon Mangkhut. <i>Journal of Wind Engineering and Industrial Aerodynamics</i> , 2022, 226, 105033.	3.9	10
6	Understanding and managing identification uncertainty of close modes in operational modal analysis. <i>Mechanical Systems and Signal Processing</i> , 2021, 147, 107018.	8.0	42
7	Achievable precision of close modes in operational modal analysis: Wide band theory. <i>Mechanical Systems and Signal Processing</i> , 2021, 147, 107016.	8.0	4
8	Two-stage Bayesian system identification using Gaussian discrepancy model. <i>Structural Health Monitoring</i> , 2021, 20, 580-595.	7.5	17
9	Bayesian operational modal analysis with multiple setups and multiple (possibly close) modes. <i>Mechanical Systems and Signal Processing</i> , 2021, 150, 107261.	8.0	21
10	Asymptotic identification uncertainty of well-separated modes in operational modal analysis with multiple setups. <i>Mechanical Systems and Signal Processing</i> , 2021, 152, 107382.	8.0	9
11	Ambient vibration testing and operational modal analysis of monopole telecoms structures. <i>Journal of Civil Structural Health Monitoring</i> , 2021, 11, 1077.	3.9	5
12	Bayesian data driven model for uncertain modal properties identified from operational modal analysis. <i>Mechanical Systems and Signal Processing</i> , 2020, 136, 106511.	8.0	17
13	Probabilistic Analysis Methodology for Thermal Protection System during Conceptual Design. <i>Journal of Aerospace Engineering</i> , 2019, 32, 04019085.	1.4	1
14	An expectation-maximization algorithm for Bayesian operational modal analysis with multiple (possibly close) modes. <i>Mechanical Systems and Signal Processing</i> , 2019, 132, 490-511.	8.0	34
15	Asymptotic identification uncertainty of close modes in Bayesian operational modal analysis. <i>Mechanical Systems and Signal Processing</i> , 2019, 133, 106273.	8.0	14
16	Bayesian operational modal analysis of offshore rock lighthouses: Close modes, alignment, symmetry and uncertainty. <i>Mechanical Systems and Signal Processing</i> , 2019, 133, 106306.	8.0	20
17	Advances in Simulation-Based Uncertainty Quantification and Reliability Analysis. <i>ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering</i> , 2019, 5, .	1.7	4
18	Bayesian modal identification method based on general coherence model for asynchronous ambient data. <i>Mechanical Systems and Signal Processing</i> , 2019, 132, 194-210.	8.0	1

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19	Efficient Estimation of Probability of Conflict Between Air Traffic Using Subset Simulation. IEEE Transactions on Aerospace and Electronic Systems, 2019, 55, 2719-2742.	4.7	9
20	Instrument noise calibration with arbitrary sensor orientations. Mechanical Systems and Signal Processing, 2019, 117, 879-892.	8.0	5
21	Bayesian operational modal analysis with buried modes. Mechanical Systems and Signal Processing, 2019, 121, 246-263.	8.0	13
22	Determination of site-specific soil-water characteristic curve from a limited number of test data – A Bayesian perspective. Geoscience Frontiers, 2018, 9, 1665-1677.	8.4	38
23	Markov chain Monte Carlo-based Bayesian method for structural model updating and damage detection. Structural Control and Health Monitoring, 2018, 25, e2140.	4.0	51
24	Mode shape scaling and implications in modal identification with known input. Engineering Structures, 2018, 156, 411-416.	5.3	8
25	Bayesian operational modal analysis of Jiangyin Yangtze River Bridge. Mechanical Systems and Signal Processing, 2018, 110, 210-230.	8.0	53
26	Operational modal analysis of an eight-storey building with asynchronous data incorporating multiple setups. Engineering Structures, 2018, 165, 50-62.	5.3	13
27	Robustness of Subset Simulation to Functional Forms of Limit State Functions in System Reliability Analysis: Revisiting and Improvement. IEEE Transactions on Reliability, 2018, 67, 66-78.	4.6	8
28	Bayesian operational modal analysis with asynchronous data, part I: Most probable value. Mechanical Systems and Signal Processing, 2018, 98, 652-666.	8.0	18
29	Bayesian operational modal analysis with asynchronous data, Part II: Posterior uncertainty. Mechanical Systems and Signal Processing, 2018, 98, 920-935.	8.0	18
30	Quantifying and managing uncertainty in operational modal analysis. Mechanical Systems and Signal Processing, 2018, 102, 139-157.	8.0	33
31	Posterior uncertainty, asymptotic law and Cram�r-Rao bound. Structural Control and Health Monitoring, 2018, 25, e2113.	4.0	7
32	A Gibbs sampling algorithm for structural modal identification under seismic excitation. Earthquake Engineering and Structural Dynamics, 2018, 47, 2735-2755.	4.4	12
33	Reliability sensitivity analysis of geotechnical monitoring variables using Bayesian updating. Engineering Geology, 2018, 245, 130-140.	6.3	16
34	Bayesian Approach in the Modal Analysis of Electromechanical Oscillations. IEEE Transactions on Power Systems, 2017, 32, 316-325.	6.5	14
35	System reliability analysis of slope stability using generalized Subset Simulation. Applied Mathematical Modelling, 2017, 46, 650-664.	4.2	65
36	Bayesian updating and model class selection with Subset Simulation. Computer Methods in Applied Mechanics and Engineering, 2017, 317, 1102-1121.	6.6	52

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37	Spectral characteristics of asynchronous data in operational modal analysis. Structural Control and Health Monitoring, 2017, 24, e1981.	4.0	13
38	Calculation of Hessian under constraints with applications to Bayesian system identification. Computer Methods in Applied Mechanics and Engineering, 2017, 323, 373-388.	6.6	8
39	Auxiliary Random Finite Element Method for Risk Assessment of 3-D Slope. , 2017, , .		2
40	Optimised ambient vibration testing of long span bridges. Procedia Engineering, 2017, 199, 38-47.	1.2	8
41	Bayesian approach in the modal analysis of electromechanical oscillations. , 2017, , .		1
42	Operational Modal Analysis. , 2017, , .		41
43	Bayesian Inference. , 2017, , 265-289.		5
44	OPERATIONAL MODAL ANALYSIS OF BRODIE TOWER USING A BAYESIAN APPROACH. , 2017, , .		3
45	Single Mode Problem. , 2017, , 365-390.		0
46	Multi-setup Problem. , 2017, , 419-451.		0
47	Ambient Data Modeling and Analysis. , 2017, , 225-262.		0
48	Model validity and frequency band selection in operational modal analysis. Mechanical Systems and Signal Processing, 2016, 81, 339-359.	8.0	8
49	Investigation of Operational Modal Identification of a Cable-Stayed Bridge Based on Bayesian Estimation Considering Stochastic Uncertainty. Journal of Japan Society of Civil Engineers Ser A2 (Applied Mechanics (AM)), 2016, 72, I_751-I_762.	0.1	0
50	Three-dimensional slope reliability and risk assessment using auxiliary random finite element method. Computers and Geotechnics, 2016, 79, 146-158.	4.7	109
51	Rare event simulation in finite-infinite dimensional space. Reliability Engineering and System Safety, 2016, 148, 67-77.	8.9	44
52	On MCMC algorithm for Subset Simulation. Probabilistic Engineering Mechanics, 2016, 43, 117-120.	2.7	27
53	Fast Bayesian approach for modal identification using free vibration data, Part II "Posterior uncertainty and application. Mechanical Systems and Signal Processing, 2016, 70-71, 221-244.	8.0	24
54	Fast Bayesian approach for modal identification using free vibration data, Part I "Most probable value. Mechanical Systems and Signal Processing, 2016, 70-71, 209-220.	8.0	42

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55	Probabilistic Model for Modal Properties Based on Operational Modal Analysis. ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering, 2016, 2, .	1.7	8
56	Insights on the Bayesian spectral density method for operational modal analysis. Mechanical Systems and Signal Processing, 2016, 66-67, 1-12.	8.0	23
57	Fundamental two-stage formulation for Bayesian system identification, Part II: Application to ambient vibration data. Mechanical Systems and Signal Processing, 2016, 66-67, 43-61.	8.0	28
58	Fundamental two-stage formulation for Bayesian system identification, Part I: General theory. Mechanical Systems and Signal Processing, 2016, 66-67, 31-42.	8.0	57
59	Bayesian Operational Modal Analysis. CISM International Centre for Mechanical Sciences, Courses and Lectures, 2016, , 117-135.	0.6	1
60	Extracting rare failure events in composite system reliability evaluation via subset simulation. , 2015, , .		0
61	Bayesian Operational Modal Analysis. , 2015, , 214-225.		0
62	Assessing uncertainty in operational modal analysis incorporating multiple setups using a Bayesian approach. Structural Control and Health Monitoring, 2015, 22, 395-416.	4.0	43
63	Extracting Rare Failure Events in Composite System Reliability Evaluation Via Subset Simulation. IEEE Transactions on Power Systems, 2015, 30, 753-762.	6.5	45
64	Bayesian model updating of a coupled-slab system using field test data utilizing an enhanced Markov chain Monte Carlo simulation algorithm. Engineering Structures, 2015, 102, 144-155.	5.3	122
65	Operational modal analysis of a long-span suspension bridge under different earthquake events. Earthquake and Structures, 2015, 8, 859-887.	1.0	15
66	Bayesian Operational Modal Analysis. , 2015, , 1-15.		0
67	Structural Model Updating of a Steel Truss Structure Utilizing Ambient Vibration Measurement. , 2014, , .		0
68	Fast Bayesian modal identification of structures using known single-input forced vibration data. Structural Control and Health Monitoring, 2014, 21, 381-402.	4.0	29
69	Development of a practical algorithm for Bayesian model updating of a coupled slab system utilizing field test data. Engineering Structures, 2014, 79, 182-194.	5.3	48
70	Uncertainty law in ambient modal identification—Part I: Theory. Mechanical Systems and Signal Processing, 2014, 48, 15-33.	8.0	54
71	Uncertainty law in ambient modal identification—Part II: Implication and field verification. Mechanical Systems and Signal Processing, 2014, 48, 34-48.	8.0	39
72	Bayesian operational modal analysis: Theory, computation, practice. Computers and Structures, 2013, 126, 3-14.	4.4	157

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73	Implementing Nataf transformation in a spreadsheet environment and application in reliability analysis. , 2013, , .		1
74	Bayesian parameter identification of hysteretic behavior of composite walls. Probabilistic Engineering Mechanics, 2013, 34, 101-109.	2.7	25
75	Fast Bayesian Ambient Modal Identification Incorporating Multiple Setups. Journal of Engineering Mechanics - ASCE, 2012, 138, 800-815.	2.9	60
76	Full-Scale Validation of Dynamic Wind Load on a Super-Tall Building under Strong Wind. Journal of Structural Engineering, 2012, 138, 1161-1172.	3.4	23
77	Theory and practice of Bayesian modal identification using ambient data. Journal of Japan Society of Civil Engineers Ser A2 (Applied Mechanics (AM)), 2012, 68, I_59-I_67.	0.1	1
78	Bayesian post-processor and other enhancements of Subset Simulation for estimating failure probabilities in high dimensions. Computers and Structures, 2012, 92-93, 283-296.	4.4	148
79	Full-scale dynamic testing and modal identification of a coupled floor slab system. Engineering Structures, 2012, 37, 167-178.	5.3	49
80	Field observations on modal properties of two tall buildings under strong wind. Journal of Wind Engineering and Industrial Aerodynamics, 2012, 101, 12-23.	3.9	78
81	Discussion of paper by F. Miao and M. Ghosn "Modified subset simulation method for reliability analysis of structural systems"; Structural Safety, 33:251-260, 2011. Structural Safety, 2012, 34, 379-380.	5.3	6
82	Fast Bayesian ambient modal identification in the frequency domain, Part I: Posterior most probable value. Mechanical Systems and Signal Processing, 2012, 26, 60-75.	8.0	136
83	Fast Bayesian ambient modal identification in the frequency domain, Part II: Posterior uncertainty. Mechanical Systems and Signal Processing, 2012, 26, 76-90.	8.0	113
84	Ambient modal identification of a primary-secondary structure by Fast Bayesian FFT method. Mechanical Systems and Signal Processing, 2012, 28, 280-296.	8.0	67
85	Connecting Bayesian and frequentist quantification of parameter uncertainty in system identification. Mechanical Systems and Signal Processing, 2012, 29, 328-342.	8.0	55
86	Practical reliability analysis of slope stability by advanced Monte Carlo simulations in a spreadsheet. Canadian Geotechnical Journal, 2011, 48, 162-172.	2.8	258
87	Field Measurement and Modal Identification of a Coupled Floor Slab System. Procedia Engineering, 2011, 14, 1318-1325.	1.2	0
88	Field Measurement and Bayesian Modal Identification of a Primary-Secondary Structure. Procedia Engineering, 2011, 14, 2593-2600.	1.2	1
89	Fast Bayesian FFT Method for Ambient Modal Identification with Separated Modes. Journal of Engineering Mechanics - ASCE, 2011, 137, 214-226.	2.9	177
90	Analyzing the Sensitivity of WRF's Single-Layer Urban Canopy Model to Parameter Uncertainty Using Advanced Monte Carlo Simulation. Journal of Applied Meteorology and Climatology, 2011, 50, 1795-1814.	1.5	84

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91	Reliability analysis using a 'Taylor expansion-expected value' saddlepoint approximation. International Journal of Reliability and Safety, 2011, 5, 44.	0.2	2
92	Assembling mode shapes by least squares. Mechanical Systems and Signal Processing, 2011, 25, 163-179.	8.0	61
93	Modulation of stochastic diffusion by wave motion. Probabilistic Engineering Mechanics, 2011, 26, 142-147.	2.7	4
94	Optimal sensor configuration of a typical transmission tower for the purpose of structural model updating. Structural Control and Health Monitoring, 2011, 18, 305-320.	4.0	59
95	On assessing the posterior mode shape uncertainty in ambient modal identification. Probabilistic Engineering Mechanics, 2011, 26, 427-434.	2.7	48
96	CPT-Based Probabilistic Characterization of Effective Friction Angle of Sand. , 2011, , .		3
97	Expanded Reliability-Based Design Approach for Drilled Shafts. Journal of Geotechnical and Geoenvironmental Engineering - ASCE, 2011, 137, 140-149.	3.0	85
98	Importance Sampling of Nonlinear Structures Using Adapted Process. Computational Methods in Applied Sciences (Springer), 2011, , 47-65.	0.3	0
99	Bayesian approach for probabilistic characterization of sand friction angles. Engineering Geology, 2010, 114, 354-363.	6.3	166
100	Design optimization using Subset Simulation algorithm. Structural Safety, 2010, 32, 384-392.	5.3	60
101	Implementing advanced Monte Carlo simulation under spreadsheet environment. Structural Safety, 2010, 32, 281-292.	5.3	77
102	Efficient Monte Carlo Simulation of parameter sensitivity in probabilistic slope stability analysis. Computers and Geotechnics, 2010, 37, 1015-1022.	4.7	150
103	Stochastic diffusion by progressive waves in turbulence. Journal of Hydrodynamics, 2010, 22, 588-593.	3.2	0
104	Seismic Risk Assessment and Mitigation of Water Supply Systems. Earthquake Spectra, 2010, 26, 257-274.	3.1	59
105	Importance sampling for elasto-plastic systems using adapted process with deterministic control. International Journal of Non-Linear Mechanics, 2009, 44, 190-199.	2.6	5
106	Spatial distribution of water supply reliability and critical links of water supply to crucial water consumers under an earthquake. Reliability Engineering and System Safety, 2009, 94, 534-541.	8.9	30
107	Stochastic control approach to reliability of elasto-plastic structures. Structural Engineering and Mechanics, 2009, 32, 21-36.	1.0	5
108	First passage probability of elasto-plastic systems by importance sampling with adapted process. Probabilistic Engineering Mechanics, 2008, 23, 114-124.	2.7	13

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109	Multi-Objective Optimization Under Uncertainty of Satellite Systems Via Simulated Annealing. , 2008, , .		2
110	Closure to "Reliability Analysis of Single-Degree-of-Freedom Elastoplastic Systems. I: Critical Excitations" by Siu-Kui Au, Heung-Fai Lam, and Ching-Tai Ng. Journal of Engineering Mechanics - ASCE, 2008, 134, 924-925.	2.9	0
111	Uncertainty Quantification in Estimating Critical Spacecraft Component Temperatures. Journal of Thermophysics and Heat Transfer, 2007, 21, 422-430.	1.6	23
112	Uncertainty Quantification in Conceptual Design via an Advanced Monte Carlo Method. Journal of Aerospace Computing, Information, and Communication, 2007, 4, 902-917.	0.8	12
113	Reliability Analysis of Single-Degree-of-Freedom Elastoplastic Systems. II: Suboptimal Excitations. Journal of Engineering Mechanics - ASCE, 2007, 133, 1081-1085.	2.9	0
114	Reliability Analysis of Single-Degree-of-Freedom Elastoplastic Systems. I: Critical Excitations. Journal of Engineering Mechanics - ASCE, 2007, 133, 1072-1080.	2.9	12
115	Compartment fire risk analysis by advanced Monte Carlo simulation. Engineering Structures, 2007, 29, 2381-2390.	5.3	62
116	Augmenting approximate solutions for consistent reliability analysis. Probabilistic Engineering Mechanics, 2007, 22, 77-87.	2.7	36
117	Application of saddlepoint approximation in reliability analysis of dynamic systems. Earthquake Engineering and Engineering Vibration, 2007, 6, 391-400.	2.3	17
118	Application of subset simulation methods to reliability benchmark problems. Structural Safety, 2007, 29, 183-193.	5.3	213
119	Uncertainty Quantification in Estimating Critical Spacecraft Component Temperatures. , 2006, , .		0
120	Sub-critical excitations of SDOF elasto-plastic systems. International Journal of Non-Linear Mechanics, 2006, 41, 1095-1108.	2.6	6
121	Critical excitation of sdof elasto-plastic systems. Journal of Sound and Vibration, 2006, 296, 714-733.	3.9	18
122	Reliability estimation for dynamical systems subject to stochastic excitation using subset simulation with splitting. Computer Methods in Applied Mechanics and Engineering, 2005, 194, 1557-1579.	6.6	118
123	Reliability-based design sensitivity by efficient simulation. Computers and Structures, 2005, 83, 1048-1061.	4.4	256
124	Heat transfer analysis using a Green's function approach for uniformly insulated steel members subjected to fire. Engineering Structures, 2005, 27, 1551-1562.	5.3	24
125	Hybrid Subset Simulation method for reliability estimation of dynamical systems subject to stochastic excitation. Probabilistic Engineering Mechanics, 2005, 20, 199-214.	2.7	87
126	Effect of Seismic Risk on Lifetime Property Value. Earthquake Spectra, 2004, 20, 1211-1237.	3.1	37

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127	Two-Stage Structural Health Monitoring Approach for Phase I Benchmark Studies. Journal of Engineering Mechanics - ASCE, 2004, 130, 16-33.	2.9	109
128	Probabilistic Failure Analysis by Importance Sampling Markov Chain Simulation. Journal of Engineering Mechanics - ASCE, 2004, 130, 303-311.	2.9	47
129	Structural damage detection and assessment by adaptive Markov chain Monte Carlo simulation. Structural Control and Health Monitoring, 2004, 11, 327-347.	4.0	60
130	Important sampling in high dimensions. Structural Safety, 2003, 25, 139-163.	5.3	287
131	Subset Simulation and its Application to Seismic Risk Based on Dynamic Analysis. Journal of Engineering Mechanics - ASCE, 2003, 129, 901-917.	2.9	313
132	Discussion of "Redundancy Index of Lifeline Systems" by Masaru Hoshiya and Kinya Yamamoto. Journal of Engineering Mechanics - ASCE, 2003, 129, 1104-1104.	2.9	1
133	Bayesian Updating of Structural Models and Reliability using Markov Chain Monte Carlo Simulation. Journal of Engineering Mechanics - ASCE, 2002, 128, 380-391.	2.9	645
134	First excursion probabilities for linear systems by very efficient importance sampling. Probabilistic Engineering Mechanics, 2001, 16, 193-207.	2.7	223
135	Estimation of small failure probabilities in high dimensions by subset simulation. Probabilistic Engineering Mechanics, 2001, 16, 263-277.	2.7	1,722
136	Monitoring Structural Health Using a Probabilistic Measure. Computer-Aided Civil and Infrastructure Engineering, 2001, 16, 1-11.	9.8	114
137	Bayesian Probabilistic Approach to Structural Health Monitoring. Journal of Engineering Mechanics - ASCE, 2000, 126, 738-745.	2.9	326
138	Entropy-Based Optimal Sensor Location for Structural Model Updating. JVC/Journal of Vibration and Control, 2000, 6, 781-800.	2.6	276
139	Reliability of uncertain dynamical systems with multiple design points. Structural Safety, 1999, 21, 113-133.	5.3	67
140	A new adaptive importance sampling scheme for reliability calculations. Structural Safety, 1999, 21, 135-158.	5.3	449
141	<title>Entropy-based optimal sensor location for structural damage detection</title>., 1998, 3325, 161.		6